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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,181	10/22/2003	Silvia Duran	CUC-129	6799

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EXAMINER

VERDIER, CHRISTOPHER M

ART UNIT PAPER NUMBER

3745

DATE MAILED: 12/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

NT

<b>Office Action Summary</b>	<b>Application No.</b> 10/691,181	<b>Applicant(s)</b> DURAN ET AL.	
	<b>Examiner</b> Christopher Verdier	<b>Art Unit</b> 3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

Receipt and entry of Applicant's Preliminary Amendment dated October 22, 2003 is acknowledged.

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the multistage pump having an electric motor, with each stage having an impeller and a diffuser (claim 1) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

The disclosure is objected to because of the following informalities: Appropriate correction is required.

On page 9, line 14, “Y-abscissas” should be changed to -- X-abscissa --.

The specification is objected to as being inaccurate, because on page 2, lines 9-16, situations e and f are two different embodiments from situations a-d, and situations g and h are two different embodiments from situations a-d and situations e and f. However, lines 9-16 state that the pump has limitations e-h in combination with limitations a-d. See the detailed explanation below.

### *Claim Objections*

Claims 1-3 are objected to because of the following informalities: Appropriate correction is required.

In claim 1, line 6, -- , -- should be inserted after “zones”.

In claim 1, line 10, -- the -- should be inserted before “Y-axis”.

In claim 1, limitation f, “C-0” should be changed to -- C=0 --.

In claim 2, line 3, “because” should be changed to -- in that --.

In claim 2, limitation b1, “A-0” should be changed to -- A=0 --.

In claim 3, line 3, “because” should be changed to -- in that --.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, lines 3-4, the recitation that each stage has a pump, is inaccurate and confusing. Each stage has an impeller and a diffuser, with the stages making up the pump proper. Each stage does not have a pump, because this implies that there are multiple pumps, which is not the case. It is suggested that in claim 1, line 5, "a pump" be deleted in order to correct this. Claim 1, limitations e and f are inaccurate in that these are a separate embodiment from the embodiment that comprises limitations a-d. Limitations a-d respectively correspond to the table on page 10 of the specification for the identifications  $Q_1$  y  $Q_2/D/NA/C$ ,  $Q_1$  y  $Q_2/D/NA/T$ ,  $Q_1$  y  $Q_2/D/A/C$ , and  $Q_1$  y  $Q_2/D/A/T$ . As seen in the table, limitation e corresponds to identification  $Q_1$  y  $Q_2/D/NA/C$ , while limitation f corresponds to identification  $Q_1$  y  $Q_2/D/NA/T$ . Claim 1, limitations g and h are inaccurate in that these are a separate embodiment from the embodiment that comprises limitations a-d as well as the embodiment that comprises limitations e-f. As seen in the table, limitation g corresponds to identification  $Q_1$  y  $Q_2/D/\beta/C$ , while limitation h corresponds to identification  $Q_1$  y  $Q_2/D/\beta/T$ . Claim 2, limitations a1-f1 are inaccurate in that these only correspond to a flow rate  $Q_1$  of 2500 to 6000 liters/min, yet they depend from claim 1 which recites a flow rate of 2500 to 8000 liters/min. Claim 2, limitations e1 and f1 are inaccurate in that these are a separate embodiment from the embodiment that comprises limitations a1-d1. Limitations a1-d1 respectively correspond to the table on page 10

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of the specification for the identifications  $Q_1/I/NA/C$ ,  $Q_1/I/NA/T$ ,  $Q_1/I/A/C$ , and  $Q_1/I/A/T$ . As seen in the table, limitation e1 corresponds to identification  $Q_1/I/\beta/C$ , while limitation f1 corresponds to identification  $Q_1/I/\beta/T$ . Claim 3, limitations a2-f2 are inaccurate in that these only correspond to a flow rate  $Q_2$  of 4500 to 8000 liters/min, yet they depend from claim 1 which recites a flow rate of 2500 to 8000 liters/min. Claim 2, limitations e2 and f2 are inaccurate in that these are a separate embodiment from the embodiment that comprises limitations a2-d2. Limitations a2-d2 respectively correspond to the table on page 10 of the specification for the identifications  $Q_2/I/NA/C$ ,  $Q_2/I/NA/T$ ,  $Q_2/I/A/C$ , and  $Q_2/I/A/T$ . As seen in the table, limitation e2 corresponds to identification  $Q_2/I/\beta/C$ , while limitation f2 corresponds to identification  $Q_2/I/\beta/T$ .

### ***Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kobayashi '275 and '661 are cited to show compressors with vanes and vaneless zones on the impellers and diffusers.

Diankui is cited to show a pump with various impeller blade and diffuser blade geometries.

Vuillet, Arnaudeau, Thibert, Lohmann, and Kim are cited to show impeller blades which are formed according to polynomial expressions.

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*Allowable Subject Matter*

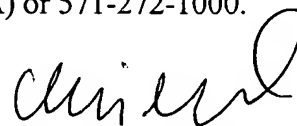
No indication of allowable subject matter may be made at this time due to the inaccurate and indefinite nature of the claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Verdier whose telephone number is (571) 272-4824. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward K. Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

C.V.  
November 28, 2006

  
Christopher Verdier  
Primary Examiner  
Art Unit 3745